REMARKS/ARGUMENT

The Office Action was mailed in the present case on October 30, 2003, making a response due on or before January 30, 2004. Applicant is submitting this response, along with a Petition For Extension of Time Within the First Month, and the required extension fee. If any additional fee is due for the continued prosecution of this application, please charge the same to Applicant's Deposit Account No. 50-2555 (Whitaker, Chalk, Swindle & Sawyer, LLP).

Claims 11-20 were pending in the application. The Examiner initially rejected Applicant's claims 11-20 as being indefinite under 35 U.S.C. §112 in that the terms "coarse grains" and "thin layer" were not adequately supported in the Specification as originally filed. The term "hardened protective layer" was objected to under §112 as lacking adequate antecedent basis.

With regard to the term "coarse grains", Applicant wishes to direct the Examiner's attention to the language of the Specification at page 1, lines 10-12, where the term "coarse grains" is defined. There, Applicant states that:

> *These products based on calcium oxide in the form of coarse grains are in the form of grains whose size is greater than 10mm, and is preferably between 10 and 70 mm.*

Since Applicant's Specification as originally filed clearly defines the term "coarse grains", the term is not thought by Applicant to be indefinite. Reconsideration of this point by the Examiner is respectfully requested.

With regard to the remaining indefiniteness issues, Applicant has deleted the term "thin" before "layer" and has replaced the term "hardened" by "solid."

The Examiner also rejected Applicant's Claims 11-20 substantively under 35 U.S.C. §102 based upon the reference to Nakanishi (JP 58-180-225). Claims 11-13, 15 and 17-20 were rejected

based upon 35 U.S.C. §102(b) as being anticipated by Kust (U.S. 5, 997, 601). Applicant has amended the claim language in view of the Examiner's remarks. Reconsideration of remaining Claims 11-17 and 19-22 is requested in view of the remarks which follow.

Applicant's claims as initially filed have been amended so that amended Claim 11 combines the features of previous Claim 11 and a portion of the initial part of Claim 12. Similarly, amended Claim 17 is a combination of previous Claims 17 and 18. Applicant has also added new Claims 21 and 22 which are similar in scope to the previously filed Claims 11 and 17, except that the minimal size of the grains in millimeters is included in the claim language.

Applicant requested a complete translation of Nakanishi (JP58-180225) n order to understand the exact scope of this document. The translation is also included as an attachment to this response for consideration by the Examiner.

Nakanishi relates to a quicklime powder, the particles of which are coated by a selected compound (stearic acid, stearyl alcohol, paraffin, ethylene-vinyl acetate copolymer and polyester) in order to give fluidity and moisture proofness to the quicklime powder (p.1., 1.6 from the bottom).

A main problem to be solved by the teaching of Nakanishi is to avoid any contact between quicklime and water or moisture (see p.1, last paragraph).

The selected compound may be used in the dissolved state. As suitable solvent, there is taught toluene, n-hexane, ethylene chloride, etc., i.e, organic solvents (see p. 2, 1.15-16).

There is no aqueous phase in Nakanishi. Such as aqueous phase is absolutely to be avoided.

In Applicant's understanding of the specification of Nakanishi, the powdered quicklime is a product with fine grains. Effectively, on page 2, 1.1 and 2, the powder must be blowed into molten pig iron. See also the size of the samples in the Examples 1 to 5; 16 mess pass (<1, 19

mm) (p.3, lin 6 from the bottom). See also page 4, line 7 from the bottom where the powders are spread in the air to thicknesses of about 2 to 4 mm. Consequently the grains have a size widely lower than these thicknesses.

Finally, Applicant wishes to point out that the coated quicklime powdered of Nakanishi must be heated at least 300°C in order to recover its inherent activity (see page 3, first paragraph). Effectively, as it results from page 6 and from figures 1 to 3, the surface treated powdered quicklime has a very low activity, before the heating at 400°C for 10 minutes.

Consequently, under any fair reading of Nakanishi there is no disclosure or even suggestion of a "product with coarse grains, provided with a film-forming compound in solution or emulsion in an aqueous phase during the application and with at the surface of the grains, a layer of hydrated lime formed by reaction between water of the aqueous phase and the quicklime."

The above described reaction is given on page 3, 1ine 24, of the present patent application.

In Nakanishi, there is no reaction between quicklime and the organic solvent.

According to the teachings of the present invention, there is a great affinity between the calcium oxide and the water of the aqueous phase with formation of a superficial layer of slaked (or hydrated in the language of the skilled person) lime. This formation has three consequences:

a) as the hydration reaction between a portion of water and calcium oxide is exothermic and instantaneous, this reaction alone may be sufficient to evaporate the remaining portion of water and to obtain a solid coating of the film-forming compound (see page 3, last paragraph and page 4, first paragraph of the patent application).

b) a very rapid hardening of the film-forming compound with formation of a very thin and homogenous hydrophobic film without necessarily to heat the product (see page 3, last paragraph of the present patent application).

c) Thereafter, water has no more access to the more central calcium oxide in the grain.

The reference to Kust similarly fails to anticipate or even suggest Applicant's invention, as defined in the amended claims. Kust (U.S. 5,997,601) relates to a method for making free-flowing moisture resistant, calcium-containing particles. Granules of hygroscopic calcium-containing material , are coated with a molten soluble nitrogen-containing material, and thereafter optionally with a hydrophobic material.

The hygroscopic calcium-containing granules of Kust are soluble calcium salts, such as calcium chloride, calcium nitrate, calcium formate, calcium acetate, a calcium salt of another organic acid, a calcium saccharide compound, or a combination thereof (seel column 4, lines 57 - 61 and claims 6 and 15). Calcium chloride is used in all of the examples.

These salts are soluble in water, but inert with respect to this substance.

The molten soluble nitrogen-containing granules of Kust are a nitrogen compound at the molten state. The nitrogen-containing material is selected from the group consisting of urea, ammonium nitrate, urea phosphate, melamine, urea aldehyde polymers, monoammonium phosphate, diammonium phosphate and combination thereof (see column 5 lines 21 to 22 and claims 7 and 23). Molten urea is used in all of the examples.

The use of "urea-water solutions, ammonium nitrate water solutions" (see column 6, lines 46 to 50) and "aqueous or other solvent coating materials" (see column 6, lines 67 and column 7, lines 1) is mentioned in Kust only as theoretical possibilities. However, it is hard to understand how it would be possible to have molten urea in urea solutions (see claim 1: the soluble nitrogen containing material is at a molten state). Moreover, it is difficult to understand how to apply an aqueous solution onto the hygroscopic calcium-containing granules which are soluble in water, without promoting the deliquescence of these granules, which is exactly what is to be avoided according to the express teaching of Kust (see column 4, lines 29-32).

In any case, even if it is possible to consider the possibility of an application of a molten soluble nitrogen-containing material in water solution onto the granules, this coating will be applied onto a material which is chemically inert with respect to water (see above).

After such an application, there will be no formation on the surface of the granules of a layer of hydrated lime which in turn is coated with the solid nitrogen-containing material.

On the contrary, according to the teaching of Applicant's invention, the grains are formed of calcium oxide which is not soluble in water but reacts with this substance. CaO has a great affinity with water, but there is no absorption of water or moisture, there is a slaking or hydration reaction and the grains remain absolutely dry.

In Kust, the amount of molten urea in the product obtained in the Examples is in the range of 17.0 to 21.7 wt. %. Consequently, the layer of molten urea including a core of calcium compound fails to compare with a protective film in the sense taught by the present invention. In the particles prepared according to Kust, an external protective film is made of an hydrophobic material such as a paraffinic hydrocarbon (see claims 2 and 8) which coats the nitrogen-containing layer and not the core of calcium compound.

Finally, Applicant wishes to point out that in the Example 5 of Kust, the particle size range of calcium chloride granules is between 3.35 mm and 1.19 mm, i.e, widely lower than the coarse grains according to the invention. Further, column 6, lines 1 -9, Kust indicates a size distribution of 0.4 to 5 mm, and also up to 3 inches diameter for the moisture-resistant particles, i.e, for the calcium-containing granules coated with one layer or several successful layers of nitrogen-containing material, and not for the calcium-containing granules alone.

In Applicant's remaining Claims 15, 21 and 22, the size of at least 10 mm concerns only grains of calcium oxide without any coating.

Based upon the above arguments and amendments, Claims 11-17 and 19-22 are thought to be allowable over the art of record and an early notification of the same would be appreciated.

Respectfully submitted,

Charles D. Gunter, Jr.
Reg. No. 29,386
Whitaker, Chalk, Swindle & Sawyer, LLP
3500 City Center Tower II
301 Commerce Street
Fort Worth, Texas 76102-4186
ATTORNEY FOR APPLICANT